

ABV- IITM: Experience of a T and B School¹

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This paper elaborates the case of an institute of higher learning specializing on both Technology (T) and Management (B). It is an interesting synergization of both a T-school and a B-school. Various challenges faced and interesting initiatives undertaken are discussed. The insights gained are also spelt out with a view of sharing the experience of sustaining these initiatives.

1. Introduction

ABV-Indian Institute of Information Technology and Management (ABV-IITM), Gwalior is a premier Institute set up by Ministry of HRD, Government of India in 1997-98 with the objective of imparting quality education and conducting high quality research in the cusp areas of Information Technology and Management. The institute is the first in the series of MHRD institutions in the IIIT family. It is a novel experiment of synergizing IT and Management. It is both a T-school and a B-school complimenting each other. The institute is fully residential, spread across 150 acres of lush-green area, and has state-of-the-art infrastructure. Currently, the institute is exclusively a Postgraduate (PG) institute. It offers postgraduate and doctoral level programmes. The institute got the status of a deemed university in 2001. The institute has academic collaboration with international institutes and universities from abroad (Deshmukh, 2012).

The institute is set up with the following objectives:

- To provide research, consultancy and advancement and dissemination of knowledge.
- To undertake extra mural studies, extension programmes and field outreach activities to contribute to the development of society.
- To promote the cause of information technology and management education and research in an integrated manner.

It may be noted that, for a country like India, there is a huge demand for high quality UG education, and from the supply side, there is no dearth of good quality candidates and institutes offering UG programmes. However, getting good quality candidates at PG level, particularly at the PhD level, is a big challenge. ABV-IITM takes pride in having taken this challenge with a conscious focus on PG education with a deliberate tilt towards developing a qualified manpower in terms of PhDs. The institute has contributed to the technical manpower scenario by offering its doctoral output in IT and Management. The high quality products out of its Ph D programme are working in IITs (IIT Delhi, IIT Chennai, IIT Kharagpur), IIMs (IIM Lucknow, IIM Shillong etc.), NITs (Jaipur, Bhopal etc.), IIITs (Jabalpur) to name a few.

It may be worthwhile to dwell on the typical characteristics of a good institute (Deshmukh, 2012).

- A good institute must have good academic programmes which enable students to develop a good perspective and instill a sense and commitment towards lifelong learning.
- A good institute must have the faculty who are creating, not just conveying knowledge in their fields, and who are engaged in their disciplines beyond the institute itself.
- It should have ties to the fields with which it works - for example, the Business school should have connections to the business community; Technology school should have connections with industry and technologists.
- It should foster a passion for learning, not just train people for specific jobs, so there should generally be an eco-system enabling intellectual curiosity on campus.
- It must have a focus on continuous improvement whereby the pursuit of excellence is never ending.
- The institute cannot ignore the culture and context within which it operates and attempts to influence.

¹ This paper is based on a presentation made by the author at IIM Indore's Foundation Day Conference: "Creating and Sustaining Institutes of Higher Learning" on October 2, 2013.

This paper is an account to take stock of above characteristics with reference to ABV-IIITM Gwalior. The following premises are to be noted. These premises are the building blocks and help understand the fabric and texture of an institute such as IIITM.

- P1 : An institute is a socio-cultural- technical system
- P2 : An institute is an organic entity and has its life cycle
- P3 : An institute has its own dynamics and sensitivities
- Corollary : Residential campus has its social dynamics
- P4 : Both culture and context are inevitable parts of the institute
 - Culture
 - Culture gives identity to an institute
 - Culture is a composite entity - difficult to define but easy to feel
 - Culture is built over a period of time - it can not be copied, nor can it be transplanted!
 - Context
 - Context in which it was established, evolved and reached its maturity

2. Academic Programmes Offered

The Institute offers a five - year Integrated Post Graduate (IPG) programme leading to degree of Bachelor of Technology in Information Technology and Master of Technology/ Master of Business Administration. This is a flagship programme of the institute as reflected in terms of its acceptability by industry, parents and high ranked candidates from AIEEE examination. The curriculum consists of:

- Blend of information technology and management (typically in an IPG (M Tech programme, 30 to 35 percent course credits come from Management stream and in IPG (MBA) programme, about 40-45 percent course credits come from Technology stream.)
- Set of courses designed to introduce state-of-the art in the domain of the study. For example: there are courses such as Mobile Computing, Information Security, Set of courses designed to introduce societal orientation by linking the implications of subject under study to social and economic problems of the society. For example, there are courses such as, e-governance, Environmental Ecology etc.

Table 1: Academic Offerings

Sn	Programme	Characteristics	Credits	Expected Duration
1	Integrated Post Graduate Programme (IPG) (Admissions through AIEEE/JEE)	Leading to: B Tech (IT)+ M Tech, or, B Tech (IT) + MBA	220-230 Credits including thesis	5 Years
2	M.Tech (Admission through GATE)	Computer Sc and Engg. (Adv Networks, Infor. Security, VLSI, Digital Comm)	58-60 Credits including thesis	2 years
3	MBA (Admission Through CAT/MAT/CMAT/JMET)	Focus on integration of IT and Management with specializations in General, PSM (e-governance) and IT Enabled Services	60-70 Credits including thesis	2 years
4	PhD (Admissions through written test, presentation and	With focus areas in IT, CS, EC, Management /Humanities and Applied Sciences	12 Credits course work+ Thesis	Min. 3 years

Table 2: Various Challenges Faced by the Institute

Sn	Challenge	How was it Addressed?
C1	Documentation	Through ISO9001:2008 Certification: Hired a consultant to help in documentation Digitization of records: Academic and Admn Related through an agency
C2	Streamlining of Procedures	ISO9001: 2008 acted as a platform Involvement of internal people with experts from outside for adopting procedures
C3	Automation	Computerization of various activities Use of software such as Tally, SORS (an in-house ERP for academic system)
C4	Work Culture	Involvement of various stakeholders Making processes transparent, Getting feedback from various users Periodic visits by employees (Faculty, staff) to other institutes Periodic visits by outside experts Regular hosting of events involving people from outside

The institute also offers regular M. Tech and MBA programme and a very vibrant Ph D programme. The total student population on the campus is about 950.

Table 1 presents the academic programmes offered by the institute.

3. Challenges Faced

The institute faces both routined and some interesting challenges.

3.1 Routined Challenges

The institute faced many challenges, being infantile in development phase, and being in a location such as Gwalior. These challenges were on account of documentation, procedures, and work culture. Table 2 shows how these challenges were addressed.

Gwalior does not have good connectivity, though it is just over 300 kms away from Delhi. The air connectivity and road connectivity are not adequate. However, the issue of connectivity is addressed through virtual or digital connectivity. For example, through video conferencing/Skype, the issue of connectivity is partially addressed.

The institute is also visible in various social media such

as Facebook, LinkedIn and also hosts and supports events outside Gwalior to show its presence and visibility.

3.2 Interesting Challenge

As mentioned, the institute works in the cusp areas of IT and Management. Applied sciences and humanities form an integral part of the institute both in terms of faculty resources, and research ares being pursued. At a gross level, it appears that the institute has a dual view: the view of a typical T-school and a view of a B-school!. (Table 3)

It is an interesting challenge to have a balanced view amalgamating both the views. This is facilitated by

- a) Faculty jointly guiding students for IPG/M Tech/ MBA thesis work.
- b) Faculty collaborating on research projects of mutual interest coming from T or B school
- c) Students and faculty jointly participating in various events.

It must be noted that at times, the institute may give a look that it is predominantly a T-school, at times, it may give a look that it is predominantly a B-school. The challenge lies in giving it a perfect blend of both T and

Table 3: Two Interesting Views

T-School View (IT/Computer Sc/Applied Sciences)	B-School View (Management and Humanities)
Strong focus on quantitative and optimum solutions	Strong focus on qualitative and heuristics
Always searching for exact answers	Searching for thumb rule based solutions
Comfortable in dealing with certainty	Comfortable in dealing with uncertainty
Work with complete information	Work with vague information
Structured in approach	Unstructured in approach

B school. This challenge cannot be met unless faculty, staff, student and other stakeholders are aligned with the vision and mission of the institute with a shared perception.

4. DNA of the Institute

The institute has earned a place of recognition. Table 4 presents a quick score card of the institute.

Generally, the DNA of any institute is characterized by several elements (Anubhai, 2011). Several DNA elements have contributed to the above scorecard.

4.1 Competent Faculty

ABV-IIITM follows IIT norms in recruitment of faculty. Every regular faculty is a Ph.D. They are selected following a rigorous process, including seminar presentation and personal interview before the selection committee. The seminar is attended by all faculty

members of the institute. Our faculty is on the editorial boards of several journals. The faculty has won several professional awards and recognition such as Best Paper Award, Young Scientist Award, Career Award by AICTE etc. The institute is also able to attract adjunct faculty from industry.

4.2 Competitive Students

The institute is able to attract high quality students reflected in their AIEEE /JEE Ranks or GATE/CAT/JMET/MAT scores. Students have won several competitions and awards. They have also won Open Source Software Competition held at several institutes including IIT Bombay, NIT Trichy etc. From ACM-ICPC to IBM The Great Mind Challenge, Lord of the Code (IIT-B and Red Hat) to Google Code Jam, the students of the Institute have been at the top position of various International and National competition.

Table 4: Quick Score Card of the Institute

S1	Publications by faculty in last five years in Refereed Journals/ Conference/Workshops (as per SCOPUS indexed database)	500+
S2	Ongoing Research Projects from external funding agencies	16
S3	Ongoing Research Projects under Faculty Initiation Grants	6
S4	Ph.D.s Awarded till date	44
S5	Books published by the Institute Faculty	22
S6	Patents filed	02
S7	Workshop/ Seminar/Conferences conducted in last 3 years	50+
S8	Number of Entrepreneurs Developed	25+
S9	Alumni base (till 2012-13)	1791

4.3 Strong Focus on Research

The institute has developed strong research themes in IT, Management, and Applied Sciences. The following is an indicative list of these areas.

T-Areas Image Processing; Biomedical Image Analysis, Wireless Ad-hoc Networks, Grid computing, Quantum computing, Mobile Computing. Biometrics, Information Security; Soft computing, AI, Modeling and Simulation of Biological and Environmental Systems, Datamining, Evolutionary Algorithms, VLSI Design, Nanoelectronics, Robotics, Reliability, Modeling for Nano materials.

B-Areas IT Enabled Marketing, Customer Relationship Management, Supply Chain Management, Project Management, Finance Management, Accounting, Technology Management, Human Resource Management, Econometrics, Social Impact of IT, Public Policy and Processes, e-governance.

Research crossing the discipline boundary is encouraged. The research is conducted by both students and faculty. The students have an opportunity of thesis work (be MBA or MTech students). This provides a good outlet for research. The outcome is through publications in national /international conferences or journals.

The faculty members have an opportunity to do sponsored research. The institute has conducted several sponsored research programmes funded by agencies such as DIT, DST, MHRD etc. Its strong focus on research has led to numerous publications during its short period of existence. Its faculty and students have contributed to over 500 publications in International Journals and Research Conferences.

4.4 Spirit of Innovation

Creating entrepreneurs thriving on innovation and creativity has been the forte of the institute. Right from its inception, the institute has been promoting entrepreneurial spirit of the students and has been

nurturing young talent through E-cell and Innovation and Incubation Centre, incubating new enterprises. The institute has a collaboration with CIIE (Centre for Innovation, Incubation and Entrepreneurship) at IIM Ahmedabad. The institute takes pride in having developed 25+ entrepreneurs till date. In a very short span of time since its inception, the Institute has witnessed over many ventures by its students. CEON Solutions, BCube IT Services, ADAVANTAL Technologies, are to name a few such vibrant units. The faculty and students are encouraged to set up new enterprises.

4.5 Peer-to-peer Learning

There is a student forum called, Abhigyan Abhikaushalam Student Forum (AASF). This is a completely student driven forum emphasizing on peer-to-peer learning. All activities are managed by students.

- It organizes 50+ events per year
- Brings out magazine showcasing student talent
- Sensitizes about various issues
- Organizes various programming contests, b-plan competitions, quizzes etc. thereby help students in digesting both T and B view in synchronization with each other
- Helps to develop organizational skills along with technical skills

4.6 Enabling Ecosystem

The institute provides an enabling ecosystem for research. This includes a well-stocked library, state-of-the-laboratories (23 labs) and good computational facilities. The students are encouraged to present papers at national and international conferences/workshops. In last 2 years more than 80 students were funded for such participation. Besides academics, a lively culture of peer-to-peer knowledge sharing, collaborative personality development and skill enhancement ensures multi-dimensional development of the students as a part of the ecosystem.

The institute has developed strong linkages for collaboration with the Industry. There is an IBM Centre of Excellence in Software. The institute has collaboration

with C-DAC. Periodic sessions by Industry professionals are conducted to sensitize about the emerging technology and business scenario. The institute has developed strong bond with the Madhya Pradesh government for conducting various e-governance and IT related programmes for employees.

5. Impact

As one of the premier IT and Management institutes, ABV-IIITM produces a large volume of human resource which in turn serve the nation. An alumnus of ABV-IIITM is not only a human resource for Gwalior or Madhya Pradesh, s/he earns the ability to create and sustain national and international impact. Our alumni are in top leadership roles in corporations (such as TCS, Wipro, Yahoo etc.), educational institutions (such as IITs and IIMs,), research labs (such as DRDO, NTRO etc.), NGOs, governmental agencies, and as heads of their own entrepreneurial companies.

Educational institutions are open systems. Thus, institute's technological know-how and managerial wisdom have meaning only when they addresses human and societal problems. The mandate of any academic institution should be the development and skill up-gradation of all the stakeholders by imparting needed knowledge. Therefore, one of the mandates of ABV-IIITM Gwalior is to create technological and managerial solutions to solve social and economic problems at the grass root level. In particular institute endeavors to:

- Understand the challenges faced by the populace at large.
- Understand the prevalent governance system (involving citizens, non governmental entities, business and government) and developing ways to make it more effective.
- Gear institute's research and development activities to meet these challenges.
- Develop low cost technology enabled managerial solutions which are modular in nature and have ability to interoperate with broader solutions developed at state/national level.

A number of initiatives are taken by the institute wherein technology transfer is effected.

The impact is also felt through following initiatives:

5.1 Training Programmes

- a) Apart from curriculum, ABV-IIITM is committed to the society through its social obligations. The institute is always eager to take community led initiatives, extension and outreach programme. One of our flagship programmes is training for professionals. Training for professionals, a novel concept initiated by the institute based on the idea of Finishing School in association with Department of Information Technology, Government of India. It is dedicated to guiding the professionals all round the country for excellence in Technology and Management and to bridge the gap between their education at the undergraduate level and the requirement of Information Technology Enabled Services.

So far 15 batches of students have been trained with more than 700 unemployed graduates taking advantage of this programme. The programme started as a response to the NASSCOM survey that revealed less than 25 percent of the total professionals in IT are employable. The program is a special initiative of the Institute to strengthen the quality of IT education and to enhance interface with industry, for those sections of the society who otherwise do have the access to state-of-the-art facilities and good learning environment. The programme aims to create quality manpower by imparting high quality professional training in three domains namely technology, management and soft skills for personality development. Active involvement from industry have led to the creation of good content for the program.

The finishing school has also benefitted the institute in the following ways:

- Helped in developing unemployable graduates of other institutes/colleges
- Improved in developing infrastructure
- Industry based assignments helped in gaining industry acceptance
- Industry faculty participation helped in reorienting our faculty
- Improved our visibility

- b) In line with the mission of the institute of providing e-governance solutions, the institute has conducted training programme for NREGA (National Rural Employment Guarantee Act) workers of MP for enhancing their IT skills. This is a first-of-its kind programme wherein large number of employees at the grass root level are being trained.
- c) The institute has conducted several FDPs (more than 7) in recent past. It has trained more than 225 faculty members from various T and B schools.

5.2 Environmental Consciousness

ABV-IIITM is committed to a sustainable society for future generation. It promotes environmental awareness in both formal and informal ways. In formal mode, the institute has designed courses like environmental ecology, ecosystem and sustainable development for the students. In informal mode, students are sensitized towards the present environmental problem by study tours and other participatory activities regarding water conservation, recycling, nature conservation and tree

plantation. Students are encouraged to undertake environmental projects such as waste management, environmental hazards of computer and mobile phones, water conservation as a part of course curriculum. Tree plantation is a regular activity on the campus.

The institute is first of its kind to initiate a butterfly conservatory on the campus. Butterfly is an indication of environmental health of the campus. With this view and to sensitize student community, a butterfly conservatory was launched on 11 April 2010 on the campus with active support from MP Biodiversity Board and Department of Horticulture , NDMC, New Delhi. The institute has also produced a documentary called 'Disha" to showcase the biodiversity of the campus.

5.3 Professional Impact and Recognition

The institute has also created certain professional impact. The following is a direct acknowledgement as recognized by the professional world. Table 5 provides an indicative list of recent laurels earned by the institute.

Table 5: Professional Recognition Earned by the Institute

Sn	Award/Recognition	Year	Remark
1	CMAI MP Educational Excellence Award for Best IT Institute in Madhya Pradesh, by CMAI	2013	T-View
2	25 th Rank in India Today-Nielsen Survey of Best Engineering Colleges	2012	T-View
3	20 th Rank in Top 100 Engineering Colleges for CS and 22 nd rank for EC Silicon India)	2012	T-View
4	8 th Rank in Zone (West) wise ranking of All India Engg Colleges (Silicon India)	2012	T-View
5	22 nd Rank in DataQuest-CMR Survey of Best T-schools in India	2011	T-View
6	29 th Rank in Best Professional Colleges of India, Outlook-MDRA Survey	2011	T-View
7	B-School with industry related curriculum Award by BloombergUTV	2013	B-View
8	12 th Rank in Silicon India - "What if not IIMs" Survey of 100 Top B-Schools in India	2013	B-View
9	B-school leadership Award by DNA & Stars of Industry Group	2013	B-View
10	Best B-School with Industry Related curriculum , ABP News Award	2012	B-View
11	Best B-School with IT curriculum Award by Devang Mehta Memorial Trust	2010	B-View
12	Best B-School Leadership Award by STAR News	2010	B-View

As mentioned earlier, the institute being both a T-school and B-school participates in both surveys conducted typically for a T-school or B-school.

The intangible impact is also felt in terms of enthusiastic absorption of our Ph D output by institutes which are apparently higher in academic ranking!

6. Interesting Connects

In today's networked economy, one cannot remain isolated. The institute is also no exception to this. The institute impact and get impacted by surrounding environment, eco-system and society. The institute being vanguard in IT and Management has developed strong connections with the surrounding ecosystem. This can be elaborated as:

6.1 Internal Connects

- a) Connect with students: Students are connected through several academic programmes and also through various student led initiatives. Institute constantly engages students in various activities, both technical as well as managerial. Student festivals are an indicator for this.
- b) Connect with faculty: Faculty are engaged in various activities. Besides teaching, faculty is expected to work on research, extension, and outreach activities. These activities are designed to actively engage the creative and intellectual potential of faculty in unison with students.

6.2 External Connects

- a) Connect with growing knowledge economy: Today's economy is highly connected and is based on knowledge currency. The institute has acted as a nursery for grooming talent for the knowledge economy. This talent is reflected in terms of a strong alumni base of over 1700 trained manpower spread across various IT and IT enabled services both in India and abroad.
- b) Connect with the spirit of Entrepreneurship: The institute has also acted as a spring board for entrepreneurs. It has produced entrepreneurs in IT and IT enabled services, thus merging the T-view and the B-view. The institute is also incubating technical/

business ideas which may later become business itself. There is strong foundation laid at the institute to promote the spirit of entrepreneurship through e-cell and technology innovation and incubation centre.

- c) Connect with industry: The institute has developed strong liaison with industry not only local (such as JK Tyres, Godrej, SRF etc) but at the national level (such as IBM). This helps in developing a real life perspective. The industry speakers help in making students realize the practical/pragmatic aspects of the world. The internship programmes done by students with industry help in establishing this connect.
- d) Connect with the community and society: The institute has started several initiatives to stay connected with the society. A regular IT literacy programme is conducted for neighboring community. Similarly, students also teach school children from socially disadvantaged sections of the society. Conducting several impact studies (such as assessment of Janmitra, assessment of impact of quality of service act etc.) is also a pointer to the social relevance of the institute.

It is to be noted that both internal and external connects help in establishing an identity for the institute.

7. Insights Gained and Summary

Institution building is not a simple exercise. It takes years to establish oneself. Ram Mohan (2011) demonstrates a good case of IIM Ahmedabad and the efforts taken by its visionary leadership. For a small institute such as IIITM Gwalior, it will take some time before its objective evaluation is done to assess impact. However, the following insights are important:

- a) The best practices and good procedures cannot be just transplanted. Though they are easy to understand, but difficult to implement! These are to be evolved, developed, adopted/ adapted and implemented based on the context and culture.
- b) Any change that is to be implemented must be done keeping in view the stakeholders.
- c) It is a challenging task to maintain a balance of T-view and B-view.

- d) Recruiting faculty remains the key challenge - and is harder for IIITM due to the existence of operation being CS/IT and Management led in which PhDs are less and job opportunities in the industry plenty. This challenge can be addressed suitably by working on several fronts. Providing a good eco-system to attract good faculty is just one of the initiatives.
- e) Typically an Institute has its baggage and own legacy issues which need to be addressed sensitively. Initiatives are to be brought slowly and surely after understanding the culture, context and the texture of its people!
- f) The institute is developing itself as a research-led enterprising Institute- this is quite different than a typical teaching-led Institute. It is here that the T-view and B-view help in realising this.

ABV-IIITM Gwalior is vibrant with its strong alumni base, competent faculty, competitive students and motivated staff. The institute has created a niche for itself in the cusp areas of IT and IT enabled management. The high impact research done by the faculty and students is reflected in both quality and quantity of the papers published, number of training programmes conducted and most importantly social initiatives such as Gyandhara , Butterfly conservatory, Finishing school programme. The institute has become a model wherein IT besides its various technology facets, is also perceived as an instrument for social change through a strong discipline of Management. Thus the institute can be perceived as a blend of both a T-school and a B-school. It is to be noted that for an upcoming institute - establishing its position is a herculean task - one needs to work on multiple fronts! Amalgamation of both T and B views offers immense opportunities as well as an interesting challenges.

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